

# Grade 8 Math

# Curricular Competencies

## Big Ideas

\*Number represents, describes, and compares the quantities of ratios, rates, and percents.

\*Computational fluency and flexibility extend to operations with fractions.

\*Discrete linear relationships can be represented in many connected ways and used to identify and make generalizations.

\*The relationship between surface area and volume of 3D objects can be used to describe, measure, and compare spatial relationships.

\*Analyzing data by determining averages is one way to make sense of large data sets and enables us to compare and interpret.

### Reasoning and Analyzing

### Understanding and Solving

### Communicating & Representing

### Connecting and Reflecting

Use logic and patterns to solve puzzles and play games

Use reasoning and logic to explore, analyze, and apply mathematical ideas

Estimate reasonably

Demonstrate and apply mental math strategies

Use tools or technology to explore and create patterns and relationships, and test conjectures

Model mathematics in contextualized experiences

Apply multiple strategies to solve problems in both abstract and contextualized situations

Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving

Visualize to explore mathematical concepts

Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures

Use mathematical vocabulary and language to contribute to mathematical discussions

Explain and justify mathematical ideas and decisions

Communicate mathematical thinking in many ways

Represent mathematical ideas in concrete, pictorial, and symbolic forms

Reflect on mathematical thinking

Connect mathematical concepts to each other and to other areas and personal interests

Use mathematical arguments to support personal choices

Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts

## Content

perfect square and cubes

square and cube roots

percents less than 1 and greater than 100 (decimal and fractional percents)

numerical proportional reasoning (rates, ratio, proportions, and percent)

operations with fractions (addition, subtraction, multiplication, division, and order of operations)

discrete linear relations (extended to larger numbers, limited to integers)

expressions- writing and evaluating using substitution

two-step equations with integer coefficients, constants, and solutions

surface area and volume of regular solids, including triangular and other right prisms and cylinders

Pythagorean theorem

construction, views, and nets of 3D objects

central tendency

theoretical probability with two independent events

financial literacy - best buys

